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REMARKS

Claims 1-22 are pending in the present Application. Claims 2, 4, 6-10, 14-15, 17, 20, and 22 have been amended, leaving Claims 1-22 for consideration upon entry of the present Amendment.

The Specification, in addition to Claims 2, 4, 6, 14, 17, 20, and 22, has been amended to correct certain typographical errors, which are not related to patentability and are not inteneded to be construed as narrowing. No new matter has been introduced by these amendments. For example, support for the amendments to Claims 2, 4, 6, 17, 20, and 22 can be found at least in paragraph [0008]. Support for the amendment to Claim 14 can be found at least in paragraph [0019].

Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claims 3, 4, and 8-10 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In particular, Claims 3 and 4 are rejected as allegedly being vague in reciting "a combination comprising at least one of the foregoing salts" because it is not clear what other salts make the combination. Applicants respectfully point out that Claim 3 states that the salt is sodium diphenylsulfon-3-sulphonate, potassium diphenylsulfon-3-sulphonate, or a combination comprising at least one of sodium diphenylsulfon-3-sulphonate and potassium diphenylsulfon-3-sulphonate. With respect to Claim 4, Applicants respectfully point out that the claim states that the salt is sodium perfluorobutane sulphonate, potassium perfluorobutane sulphonate, or a combination comprising at least one of sodium perfluorobutane sulphonate and potassium perfluorobutane sulphonate. Thus, it is clear what salts make the combination.

The rejection of Claims 8-10 has been rendered moot in view of the amendments thereto. Applicants appreciate the Examiner's thoroughness in noting the typographical errors.

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In view of the foregoing, the rejections applied to Claims 3, 4, and 8-10 are requested to be withdrawn.

Claim Objections

Claims 7, 14, and 15 are objected to because the word "composition" is allegedly redundant in each claim. Claims 7, 14, and 15 have been amended to remove all redundancy and to recite the flame retardant salt. Again, Applicants appreciate the Examiner's efforts in noting the typographical errors.

The objections to currently amended Claims 7, 14, and 15 are respectfully requested to be withdrawn.

First Claim Rejection Under 35 U.S.C. § 103(a)

Claims 1-5, 7-10, 12, 14-17, and 19-22 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over US Patent No. 4,735,978 to Ishihara (hereinafter "Ishihara") in view of US Patent No. 3,956,538 to Vartiak (hereinafter "Vartiak") or US. Patent No. 6,547,605 to Schaffner (hereinafter "Schaffner"). Applicants respectfully traverse this rejection.

Independent Claims 1, 16, 19 and 21 are directed to processes related to fire resistant polycarbonate compositions comprising, *inter alia*, compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition.

Ishihara is generally directed to a flame retardant polycarbonate composition. The polycarbonate composition generally includes, in admixture, an aromatic polycarbonate resin, an ortho-methyl substituted aromatic dihydroxy compound, and an additional flame retardant additive, with the ortho-methyl substituted aromatic dihydroxy compound and the additional flame retardant additive being present in an amount sufficient to improve flame resistance.

Vartiak is generally directed to a method of rendering a surface, typically of a railroad right-of-way or siding, flame retardant by sequentially spraying two solutions of two different flame retardants onto the surface.

Schaffner is directed to a flame resistant buffing wheel, wherein flame resistance is achieved by treating the buffing wheel with a flame retardant solution. In this case, the buffing material, typically containing cotton, polyester/cotton blend, or sisal, is dipped or immersed into the solution so as to allow the flame retardant to "wet" the buffing material.

Applicants first traverse the rejection on the grounds that Vartiak and Schaffner are non-analogous art. For the purposes of evaluating obviousness of claimed subject matter, the particular references relied upon must constitute "analogous art". *In re Clay*, 966 F.2d 656, 659, 23 U.S.P.Q.2d 1058, 1060-61 (Fed. Cir. 1992). The art must be from the same field of endeavor, or be reasonably pertinent to the particular problem with which the inventor is involved. *Id.*

Applicants' invention is generally directed to processes for producing a flame retardant polycarbonate composition, comprising compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition. Applicants assert that flame retardation of polycarbonate compositions, and more broadly plastic compositions, is not in the same field of endeavor as flame retardation of railroad right-of-ways and sidings, nor in the same field of endeavor as flame retardation of buffing wheels. Applicants also assert that the field of compounding is markedly different to the fields relating to both spraying and immersing. Furthermore, Vartiak and Schaffner are not reasonably pertinent to the problem with which the instant application is concerned because a person having ordinary skill in the art would not reasonably have expected to solve the problems associated with making flame resistant polycarbonate compositions, or with making polycarbonate compositions with reduced haze, color, or inclusions, by considering references dealing with flame resistant railroad right-of-ways/sidings or flame resistant buffing wheels. As such, any combination of Ishihara, Vartiak, and Schaffner used to render the claimed subject matter of the instant application obvious is inappropriate and cannot be relied upon.

Further, even assuming in arguendo that Ishihara, Vartiak, and Schaffner were analogous art, a prima facie case of obviousness has not been established in the present Office Action. To establish a prima facie case of obviousness, three basic criteria must be met. First,

there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the reference teachings. Second, there must be a reasonable expectation of success resulting from the combination. Finally, the prior art references must teach or suggest all claim limitations.

No motivation or suggestion to combine the teachings of the cited references exists. The mere fact that the references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability. *In re Mills*, 916 F.2d 680, 16 USPQ 1430 (Fed. Cir. 1990). Applicants' can find no such desirability or motivation to use the aqueous flame retardant solutions of Vartiak or Schaffner with polycarbonate compositions.

Additionally, the cited references fail to establish a prima facie case of obviousness because all elements of the invention must be disclosed in the prior art. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970). Ishihara discloses and suggests dry blending a flame retardant with a polycarbonate composition. The secondary references fail to compensate for the deficiencies of Ishihara. For example, Vartiak discloses and suggests spraying an aqueous flame retardant solution while Schaffner discloses and suggests dipping or immersing a buffing material in a flame retardant solution. Thus, a combination of references would result in treating Ishihara's polycarbonate composition by spraying it with a flame retardant solution or dipping it in a flame retardant solution. The references, individually or in combination, fail to teach or suggest "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition".

In view of the foregoing, the rejection applied to Claims 1-5, 7-10, 12, 14-17, and 19-22 is requested to be withdrawn.

Second Claim Rejection Under 35 U.S.C. § 103(a)

Claim 6 stands rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Ishihara in view of Vartiak or Schaffner as applied to Claim 1 in the First Claim Rejection Under 35 U.S.C. § 103(a) above, and further in view of US Patent No. 6,518,347 to Boyd et al

(hereinafter "Boyd"). Applicants respectfully traverse this rejection.

Boyd is directed to a flame retardant carbonate polymer composition. The carbonate polymer contains a flame retardant additive comprising metal salts of a highly fluorinated methide, amide, or imide anion, of which potassium perfluorobutane sulfonate is disclosed.

Claim 6 depends from Claim 1, and as such, this claim includes all of the limitations of Claim 1. Thus, Claim 6 is directed to a process for producing a fire resistant polycarbonate compositions comprising compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition. As previously discussed, any combination of Ishihara with Vartiak and Schaffner that is used to render Claim 1, and by extension Claim 6, obvious cannot be relied upon. Consequently, any additional prior art (e.g., Boyd), must compensate for the deficiencies of Ishihara. Since Ishihara and Boyd both fail to teach or even suggest "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition", the Examiner has not met the burden of establishing a prima facie case of obviousness, which requires that all elements of the invention be disclosed in the cited references. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

Accordingly, Applicants request the rejection of Claim 6 be withdrawn.

Third Claim Rejections Under 35 U.S.C. § 103(a)

Claim 11 stands rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Ishihara in view of Vartiak or Schaffner as applied to Claim 1 in the First Claim Rejection Under 35 U.S.C. § 103(a) above, and further in view of US Patent No. 6,174,944 to Chiba et a (hereinafter "Chiba"). Applicants respectfully traverse this rejection.

Chiba is directed to flame retardant polycarbonate resin compositions, which contain, among others, additive components of fibrous fillers, surface-treating agents, and inorganic fillers.

Claim 11 depends from Claim 1, and as such, this claim includes all of the limitations of Claim 1. Thus, Claim 11 is directed to a process for producing a fire resistant polycarbonate compositions comprising compounding an aqueous solution of a flame

retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition. As previously discussed, any combination of Ishihara with Vartiak and Schaffner that is used to render Claim 1, and by extension Claim 11, obvious cannot be relied upon. Consequently, any additional prior art (e.g., Chiba), must compensate for the deficiencies of Ishihara. Since Ishihara and Chiba both fail to teach or even suggest "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition", the Examiner has not met the burden of establishing a prima facie case of obviousness, which requires that all elements of the invention be disclosed in the cited references. *In Re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970).

Accordingly, Applicants request the rejection of Claim 11 be withdrawn.

Fourth Claim Rejections Under 35 U.S.C. § 103(a)

Claims 13 and 18 stand rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Ishihara in view of Vartiak or Schaffner as applied to Claims 1 and 16 in the First Claim Rejection Under 35 U.S.C. § 103(a) above, and further in view of US Patent No. 4,154,692 to McElveen (hereinafter "McElveen). Applicants respectfully traverse this rejection.

McElveen is directed to flame retardant solutions containing water and alcohol, and processes for making flame retardant fabrics and fibers, specifically cellulose acetate and cellulose triacetate, by immersing the fabrics or fibers in the flame retardant solutions.

Claims 13 and 18 depend from Claims 1 and 16 respectively, and as such, these claims include all of the limitations of Claims 1 and 16. Thus Claims 13 and 18 are directed to a process for producing a fire resistant polycarbonate composition comprising compounding an aqueous solution of a flame retardant salt with a polycarbonate composition to form the fire resistant polycarbonate composition.

As previously discussed, any combination of Ishihara with Vartiak and Schaffner that is used to render Claims 1 and 16, and by extension Claim 13 and 18 respectively, obvious cannot be relied upon. For similar reasons, McElveen is also non-analogous art and cannot be properly combined with Ishihara. Applicants assert that flame retardation of polycarbonate compositions, and more broadly plastic compositions, is not in the same field of endeavor

flame retardation of textiles. Furthermore, McElveen is not reasonably pertinent to the problem with which the instant application is concerned because a person having ordinary skill in the art would not reasonably have expected to solve the problems associated with making flame resistant polycarbonate compositions, or with making polycarbonate compositions with reduced haze, by considering references dealing with flame resistant textiles. As such, the combination of Ishihara and McElveen used to render the claimed subject matter of the instant application obvious is inappropriate and cannot be relied upon.

Moreover, even assuming in arguendo that the cited references could be combined, their combination fails to teach all elements of the invention. Once again, Ishihara discloses and suggests dry blending a flame retardant with a polycarbonate composition. The secondary references do not compensate for the deficiencies of Ishihara. Vartiak and Schaffner have already been discussed above. McElveen discloses and suggests dipping or immersing a textile material in a flame retardant solution. Thus, a combination of references would result in treating Ishihara's polycarbonate composition by dipping it in a flame retardant solution. The references, individually or in combination, fail to teach or suggest "compounding an aqueous solution of a flame retardant salt with a polycarbonate composition".

Accordingly, Applicants request the rejection of Claims 13 and 18 be withdrawn.

Comment in Point 9 of Office Action

The Examiner has opined that "since the prior art teaches a composition, which has claimed ingredients in amounts that are same as or overlap those that are instantly claimed, it is reasonable to infer that the composition of prior art obviously satisfies the limitations of" Claims 12, 16, 19, and 21 unless proved to be otherwise. Applicants respectfully disagree.

The Examiner is reminded that Claims 12, 16, 19, and 21 are all process claims and not composition claims as alluded to in the Office Action. Thus, whether a prior art reference teaches a composition with ingredients in overlapping amounts is irrelevant in determining the patentability of a process claim. However, with regard to the Examiner's comment, it is well known that a prima facie case can be rebutted by evidence showing that the prior art products

do not necessarily possess the characteristics of the claimed product. *In re Best*, 562 F.2d at 1255, 195 USPQ at 433.

The Examiner is kindly directed to Table 1 and paragraph [0034] in the Specification of the instant application, reproduced in part below.

COMPONENT	FORMULATION A*	FORMULATION B*	FORMULATION C
Polycarbonate	87.7	87.6	87.6
Brominated Polycarbonate	12	12	12
UV Stabilizer	0.2	0.2	0.2
Heat Stabilizer	0.1	0.1	0.1
KSS (neat)		0.1	
KSS (20% in water)			0.5
Inclusions per 10 cm^3	33	61	29
Yellowness Index	0.95	1.1	0.95
Transmission (%)	90.8	90.9	90.7
Haze	0.95	1.75	0.95
MVR (1.2 kg/300°C, cm^3/10 minutes)	6.8	7.5	8.3

*comparative

The results, also shown in Table 1, clearly show the surprising advantages of using an aqueous solution of a flame retardant salt compared to polycarbonate compositions compounded with the flame retardant in solid form. A direct comparison of Formulation C (flame retardant in aqueous solution) with Formulation B (flame retardant in solid form) shows about a 100 percent reduction in the number of surface

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> inclusions and haze in the extruded sheet product as a result of using an aqueous solution of the flame retardant. Moreover, as noted by the yellowness index values, colored byproducts are advantageously not present when using the aqueous solution compared to compounding the flame retardant salt in solid form. Comparing the results obtained with Formulation C to Formulation A (polycarbonate without a flame retardant) illustrates that the contribution of water from the aqueous solution of the flame retardant had little or no effect on the polycarbonate sheet product, yet the polycarbonate sheet is now flame resistant with similar values for haze and surface inclusion.

As indicated in paragraph [0034], and stated explicitly in the first sentence of paragraph [0039]: "Advantageously, the use of an aqueous flame retardant salt solution provides a flame resistant and transparent extruded sheet product exhibiting minimal surface inclusions, reduced color byproducts, and reduced haze levels compared to flame resistant polycarbonate sheet products compounded with flame retardant salts in the solid form."

In light of the evidence showing that the prior art products do not necessarily possess the characteristics of those products produced by the processes of the instant application, Applicants have met their burden to rebut the Examiner's comment.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and allowance are requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 07-0862.

Respectfully submitted,

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